We claim:

1. A method of fabricating SWNT probes for use in atomic force microscopy, comprising the steps of:

growing SWNTs on a substrate using chemical vapor deposition;

imaging said substrate using an atomic force microscope comprising a tip; and

attaching one of said SWNTs to said tip, thereby producing a tip bearing a SWNT.

2. The method of claim 1 wherein the SWNTs are deposited normal to the surface of said substrate.

3. The method of claim 2 wherein the substrate is a silicon wafer.

4. The method of claim 3 wherein growing the SWNTs on a silicon wafer comprises the steps of:

depositing on said wafer a metallic catalytic material;

placing said silicon wafer in a CVD furnace; and

exposing said silicon wafers to a gaseous atmosphere comprising a carbon containing gas.

5. The method of claim 4 wherein the metallic catalytic material is selected from the group consisting of metals, metal oxides, metallic salts, and metallic particles.

6. The method of claim 4 wherein the metallic catalytic material is in solution.

7. The method of claim 6 wherein the metallic catalytic material is selected from the group consisting of ferric salts, nickel salts, cobalt salts, platinum salts, molybdenum salts, and ruthenium salts.

8. The method of claim 7 wherein the metallic catalytic material is ferric nitrate.

9. The method of claim 6 wherein the solution comprises an alcohol.

10. The method of claim 9 wherein the alcohol is selected from the group consisting of methanol, ethanol, and isopropanol.

11. The method of claim 10 wherein the alcohol is isopropanol.

12. The method of claim 4 wherein the carbon containing gas is ethylene.

13. The method of claim 9 wherein the carbon containing gas is ethylene, the metallic catalytic material is ferric nitrate, and the alcohol is isopropanol.

14. The method of claim 1 wherein imaging said substrate further comprises applying a pulsed electric field.

15. The method of claim 3 wherein growing the SWNTs on a silicon wafer comprises the steps of:

> treating said silicon wafer with metallic colloid particles;
>
> placing said silicon wafer in a CVD furnace; and
>
> exposing said silicon wafers to a gaseous atmosphere comprising a carbon containing gas.

16. The method of claim 15 wherein the metallic colloid is selected from the group consisting of iron colloids, nickel colloids, cobalt colloids, platinum colloids, molybdenum colloids, and ruthenium colloids.

17. The method of claim 16 wherein the metallic colloid is an iron colloid.

18. The method of claim 15 wherein the carbon containing gas is ethylene.

19. The method of claim 15 wherein the metallic colloids have diameters of about 3-15 nm.

20. The method of claim 1 wherein the SWNT has a diameter from about 2 nm to about 13 nm.

21. The method of claim 1 wherein the SWNT has a diameter from about 2 nm to about 9 nm.

22. The method of claim 1 wherein the SWNT has a diameter from about 3 nm to about 5 nm.

23. The method of claim 1 wherein said tip bears an adhesive.

24. The method of claim 1 further comprising the step of heating said tip bearing a SWNT.

25. The method of claim 1 further comprising the step of treating the tip bearing a SWNT with an electromagnetic field.

26. A method of growing carbon nanotubes comprising the steps of:

providing a substrate;

treating said substrate with a metallic colloid solution;

placing said substrate in a CVD furnace; and

exposing said substrate to a gaseous atmosphere comprising a carbon containing gas, thereby growing a carbon nanotube on said substrate.

27. The method of claim 26, wherein said carbon nanotube is a SWNT.

28. The method of claim 26, wherein said carbon nanotube is a MWNT.

29. The method of claim 26, wherein said substrate is a silicon wafer.

30. The method of claim 26 wherein the metallic colloid is selected from the group consisting of iron colloids, nickel colloids, cobalt colloids, platinum colloids, molybdenum colloids and ruthenium colloids.

31. The method of claim 30 wherein the metallic colloid is an iron colloid.

32. The method of claim 26 wherein the carbon containing gas is ethylene.

33. The method of claim 31 wherein the carbon containing gas is ethylene.

34. The method of claim 26 wherein the metallic colloids have diameters of about 3-15 nm.

35. The method of claim 26 wherein the solution comprises an organic solvent.

36. The method of claim 35 wherein the solution comprises toluene.